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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,861	07/23/2003	Johan Van Walsem	14074-003001	7989
26161	7590	03/15/2006	EXAMINER	
FISH & RICHARDSON PC			LILLING, HERBERT J	
P.O. BOX 1022			ART UNIT	
MINNEAPOLIS, MN 55440-1022			PAPER NUMBER	

1651

DATE MAILED: 03/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/625,861	Applicant(s) WALSEM ET AL.	
	Examiner HERBERT J. LILLING	Art Unit 1651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 22 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-127 is/are pending in the application.
- 4a) Of the above claim(s) 4,28-107 and 112-127 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-27 and 108-111 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 4,28-107 and 112-127 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 2/28/06 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner for Fig 1 and Fig 2.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10-26-2003 1 Page</u> . | 6) <input type="checkbox"/> Other: _____ |

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1. Receipt is acknowledged of the election response filed February 22, 2006.

2. Claims 1-127 are pending in this application.

Applicant has elected without traverse Group I, claims 1-27 and 108-111 and elected species, which claims 1-3, 5-27 and 108-111, read on the elected species.

Claims 4, 28-107 and 112-127 have been withdrawn from consideration.

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-3, 5-27 and 108-111 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the enabling PHA specification polymers, does not reasonably provide enablement for other polymers. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and practice the invention commensurate in scope with these claims.

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4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3 and 5-27 are rejected under 35 U.S.C. 102(e) as anticipated by Kurdikar et al., U.S. 6,043,063 teaches the following:

The PHA-poor solvent can be immiscible (i.e., less than about 10% solubility) with the PHA-good solvent. In this case, some of the precipitation of PHA polymer occurs at the interface of the PHA-good solvent and PHA-poor solvent. Alternatively, the PHA-poor solvent can be miscible (i.e., greater than about 90% solubility) with the PHA-good solvent. The use of PHA-poor solvents allow for the precipitation of PHA polymer from a PHA-enriched solvent mixture such that the polymer precipitates while many of the meal components/color bodies remain in solution. The precipitated polymer may then be separated from the PHA-good solvent/PHA-poor solvent mixture by a conventional solid-liquid separation technique, for example by filtration or centrifugation. The precipitated polymer can be further washed if desired, and then dried.

It is considered that the reference anticipates the claimed language for separating a PHA polymer with a solvent system, which includes a mixture of two solvents. The reference teaches a mixture, which includes the claimed solvents of hexane as the precipitant, and butyl acetate as the PHA solvent. The claims do not require that the solvent system containing the two solvents to be as a mixture which has also been disclosed by Kurdikar et al either as a mixture or separately added for the separation of the polymer from the biomass.

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The solvent system does not require that both solvents be added simultaneously as it is noted that the specification discloses the following for the claimed "solvent system":

" Moreover, the solvent system can be formed and then contacted with the biomass, or the biomass can be contacted with fewer than all the components of the solvent system, followed by subsequent addition of the remaining portion of the solvent system (e.g., in series or all at once). For example, in embodiments in which the solvent system includes a solvent for the PHA and a precipitant for the PHA, the slurry can be contacted with the solvent, followed by addition of the precipitant, or vice-versa. Alternatively, the solvent and precipitant can be combined to form the solvent system, followed by contacting the biomass."

or, in the alternative, Claims 1-3 and 5-27 are rejected under 35 U.S.C. 103(a)

as obvious over Kurdikar et al., U.S. 6,043,063 further in view of Noda, U.S. 5,821,299 or Horowitz, US 6,340,580 or Martin US 6,709,848.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

If there are any differences with respect to the solvent, properties of the solvent, amounts of the solvents or biomass, these differences are considered to be prima facie obvious in view of the references absent unexpected process steps or data.

It would have been prima facie obvious to employ the marginal solvent mixture to separate a polymer from a biomass of Noda U.S. 5,821,299 for the solvent of Kurdikar et al to render the claims unpatentable over the references absent unexpected or unobvious process steps.

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Both Martin and Horowitz teach the separation of polymer from a biomass employing centrifugation.

Martin teaches that:

“The PHA derivative then is separated from the PHA derivative-oil mixture using, for example, a physical process such as distillation, extraction, centrifugation, supercritical fluid extraction, preparation filtration, and/or chromatography. Further refining of the essentially oil free PHA can be carried out by standard procedures known to those skilled in the art.”

And

Horowitz teaches the centrifugation as well as the formation of a pellet :

“ ... cell slurry containing polyhydroxyalkanoate (PHA) was processed as follows to obtain a purified polymer. Cells of *Pseudomonas* sp. bacteria were fermented as described in Example 1The initial slurry (5 L), which comprised approximately 13% (wt/wt) suspended solids, was centrifuged at 4000 g for 20 min. The pellet fraction was resuspended to its original volume in deionized water and then recentrifuged under identical conditions. The pellet fraction was then resuspended in acetone to its original volume.”

The claims have been rendered prima facie obvious absent unexpected or unobvious process steps over the references of record.

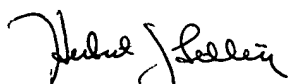
5. **No claim is allowed.**

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Examiner Lilling whose telephone number is 571-272-0918** and **Fax Number** is (703) 872-9306 or SPE Michael Wityshyn whose telephone number is 571-272-0926. Examiner can be reached Monday-Thursday from about 5:30 A.M. to about 3:00 P.M. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0196.

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Information regarding the status of an application may be obtained from the Patent Application information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://portal.uspto.gov/external/portal/pair>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

H.J.Lilling: HJL
(571) 272-0918
Art Unit 1651
March 13, 2006



Dr. Herbert J. Lilling
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